



30 YEARS RESEARCH | 30 YEARS DEVELOPMENT | 30 YEARS EXPERTISE

We celebrate
THE FUTURE



30 YEARS & MORE.....



IVW Anniversary Publication 2020

Institut für Verbundwerkstoffe GmbH

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30 Years IVW – Prof. Dr.-Ing. Ulf Breuer, Managing Director



IVW turns 30. This is a reason for us to celebrate! Our concept „from the basics to the application“ has proven to be extremely successful since our foundation by the state of Rhineland-Palatinate in 1990, and the house has developed into a leading research institution in the promising field of fiber reinforced composites in recent years. After a great effort by our founding fathers, Professors Manfred Neitzel, Klaus Friedrich and Martin Maier, and a highly motivated team from the very beginning, we can now look back with pride on a number of important basic research projects (over 170 dissertations to date), innovations, successful spin-offs and international networks. „High Tech Composites made in Kaiserslautern“ can be found today, for example, in aerospace products, in automobiles and rail vehicles, in machines, in medical and energy technologies. But we also have great plans for the future. In the field of mobility, not only light and high-strength structures that can be produced very cost-effectively and protect passengers in the best possible way, but also multifunctional solutions are required. These are structures that can also perform electrical functions, for example, or that can change their shape „at the push of a button“. In an increasingly older and wealthier society, we need new solutions in medical and health technology. Therefore, we are developing ad-

vanced technologies for customized orthoses and radiolucent implants. In the important field of energy, we are working on further reducing friction and wear and on advanced technologies for energy storage. Three guiding principles are important to us: Firstly, a holistic research approach that takes into account the entire process chain from materials, component development and production to operation and recycling. Secondly, the use of the material multifunctionality that can be implemented so excellently with composite materials in particular. And finally, the principle of sustainability, by continuing to ensure that components can be used for extremely long periods, can be easily repaired and can be efficiently reused at the end of their life cycle. Just in time for our anniversary, the Joint Science Conference (GWK) decided on June 26, 2020, that IVW should be included in the joint funding by the federal and state governments within the Leibniz Association. These are excellent prospects.

We look forward to the future!

A handwritten signature in blue ink that reads "Ulf Breuer". The signature is written in a cursive, flowing style.

Greetings Minister Prof. Dr. Konrad Wolf



Application oriented research institutes are an essential component in the knowledge and technology transfer between university research and industry. They take up knowledge from basic research, further develop the findings in an application-oriented manner and incorporate them into joint projects with the business community.

Rhineland-Palatinate has therefore established such institutes in key technological areas. A particularly successful one is the Institute for Composite Materials, or IVW for short, with the establishment of which the state has provided SMEs in particular with an attractive partner with great expertise in materials science. With its strong ties to the Technische Universität Kaiserslautern, the institute has succeeded in optimally bridging the gap between university research and business practice. IVW's clientele reflects the wide range of applications of composite materials and their important economic role: large international companies and regional SMEs value and use IVW's know-how. IVW has also set important impulses for the foundation of new companies: About 200 jobs have been created by its spin-offs so far.

With its holistic approach and its competences IVW is unique in the German research landscape and it is considered one of the most renowned in its field. The scientific competences are highly appreciated regionally, nationally and internationally.

For the state of Rhineland-Palatinate, IVW is therefore an important player in the scientific landscape, whose development represents a particular success story.

I would like to wish the institute all the best and much success for the next 30 years.

In particular I would like to thank the management and all employees, whose great dedication and commitment to IVW has made this success story possible!

Greetings Prof. Dr. Arnd Poetzsch-Heffter, TUK President



The founding of the Institute for Composite Materials (IVW) thirty years ago was a fortunate circumstance for our university and the entire research location, which has also had a positive impact on many other regional developments. From the very beginning, there has been a close connection between IVW and TU Kaiserslautern (TUK), which is lived and developed mainly by the fact that many people in leading positions at IVW are at the same time members of the teaching staff of our university - beginning with the founding directors (all in the Department of Mechanical & Process Engineering at TUK). In addition, there is also a fruitful and trustful exchange in research and teaching on other levels. The rapid move of IVW, only one year after its foundation, to its current headquarters at a central location of our campus has also been of great importance for the synergetic development. These perfect general conditions, which are thankfully provided by the state of Rhineland-Palatinate in a sustainable manner, are the basis for our intensive cooperation in research, teaching, knowledge transfer and start-up activities, starting from the first lecture in the winter term 1992/1993 on „Introduction to Composite Materials“. In addition and under the umbrella of the Science and Innovation Alliance (SIAK), of which our two institu-

tions are founding members, a large number of very successful cooperations have developed over time with the other regional players at the location. Many of these cooperations have international visibility and are indispensable for the overall development of the city of Kaiserslautern and the region.

Our joint activities are not only characterized by the excellent professionalism of all IVW employees at all levels, but also by the high mutual trust. As a representative of the TU Kaiserslautern, I highly appreciate this and I am very grateful to IVW for this.

I congratulate IVW on its anniversary and look forward to further cooperation in the research field of composite materials, which is constantly growing in importance.

A. Poetzsch-Heffter

Greetings Prof. Dr. Anita Schöbel, Scientific Advisory Board



Congratulations on 30 years of successful research! I am very pleased to express these congratulations. Once as chairwoman of the scientific advisory board of IVW on behalf of all advisory board members. The work of IVW includes many exciting research questions, which have led to successful doctoral theses, new scientific findings and relevant publications. Partners and clients of IVW have benefited in many ways from the practical orientation and scientific excellence of IVW in the past years. In the last 30 years IVW has succeeded in shaping the future orientation of research and in adjusting it to the requirements of the coming years in an outstanding way. We in the scientific advisory board look forward to accompanying IVW on its successful scientific way in the next years. But I also congratulate as head of a neighbouring institute: the Fraunhofer Institut für Techno- und Wirtschaftsmathematik ITWM. The orientation of IVW strengthens the application-oriented research at the location Kaiserslautern and thus sets new impulses for the other research institutes in Kaiserslautern, for the performance

center for „Simulation- and Software-based Innovation“ and finally for the entire region. On behalf of the whole ITWM team I congratulate IVW very warmly to 30 years of successful research.

We are pleased about such a committed partner at the location!

A handwritten signature in black ink that reads "A. Schöbel".

Fraunhofer-Institut für
Techno- und Wirtschaftsmathematik (ITWM)

Greetings Dr. Guiscard Glück, Industrial User Advisory Board



Composite materials carry the recipe for success in their name alone, the combination of materials makes the difference! Exactly this is also true for IVW: The combination of competences, the covering from the basics to the application, the networking of researchers with users was and is IVW's recipe for success for meanwhile 30 years. This is all the more commendable because composite materials in the context of materials science is a very complex field of work, whose great potential is motivating, but also often has to overcome significant hurdles in successful industrial application. In particular, the sustained scientific commitment of IVW is of central importance for the utilization of the indispensable property advantages of intelligent composite systems.

It is also impressive that IVW has established itself over many years as an attractive location for outstanding scientific minds. In short, IVW has all the ingredients to successfully promote innovations in the field of composite materials also in the future.

I congratulate IVW and wish them continued success!

A handwritten signature in blue ink, reading "Guiscard Glück". The signature is fluid and cursive.

BASF SE

30 Years IVW History

The initial step to the foundation of IVW GmbH as a non-profit research facility of the state of Rhineland-Palatinate for the research and advancement of applications and the potential use of composites was taken in 1986 by Dr. Georg Gölter, then Minister of Education of the state Rhineland-Palatinate, by setting up a commission.

In 1990 the institute was established and Prof. Dr.-Ing. Manfred Neitzel, who had a successful history in BASF's F&E area, was appointed as managing director.

At that time the institute employed 12 scientists and administrators as well as 3 guest scientists and scholarship holders. Their offices were located in 3 different

buildings with a total area of 740 m² at the University of Kaiserslautern and another 480 m² in the Technologiepark Kaiserslautern.

The institute was provided with the newly erected building 58 on the university campus with approx. 6,000 m² laboratory and office space in 1991. In 2003 followed an expansion by a "demonstration and application" center in the industrial area of Kaiserslautern with 1,200 m² space.

Furthermore, the facility and equipment technology of the three technical scientific program areas Component Development, Materials Science and Manufacturing Science were gradually improved, in order

1990
Topping-Out Ceremony



1990

1991
Inauguration and final laying of the floor tiles by Science Minister Prof. Dr. Jürgen Zöllner and Culture Minister Dr. Georg Gölter.



1991

1991
Prof. Dr. Ralf Fillibeck hands over the key to the managing director Prof. Dr.-Ing. Manfred Neitzel.



1998

seit 2010
Prof. Dr.-Ing. Ulf Breuer
Managing Director



2010

2010
Minister of Science Doris Ahnen presents Prof. Dr.-Ing. Ulf Breuer with a grant of € 1.7 million for the establishment of a technology transfer team for composite materials.



2013



1990–2002
Prof. Dr.-Ing. Manfred Neitzel
Managing Director



The IVW Founding Team
Prof. Dr.-Ing. Manfred Neitzel (2nd f. r.)
Prof. Dr.-Ing. Dr. h.c. mult. Klaus Friedrich (2nd f. l.)
Prof. Dr.-Ing. Martin Maier (1st f. r.)
Prof. Dr. h.c. mult. József Karger-Kocsis (1st f. l.)



2002–2009
Prof. Dr.-Ing. Alois K. Schlarb
Managing Director



2013
Science State Secretary Vera Reiß congratulates Prof. Dr.-Ing. Ulf Breuer and his cooperation partner, the company Schäfer MWN GmbH, on the JEC Europe Innovation Award in the field of wind energy.

to perform important development work for many composite applications from principles up to prototypes in a 1:1 scale. The acquisition of third-party funds increased from 20,000 DM in 1990 to 10 million € (incl. TTC) in 2019.

In close cooperation with the Department of Mechanical and Process Engineering of the University of Kaiserslautern the curriculum was also gradually expanded. "Introduction to Composites" by Professor Klaus Friedrich was one of the first lectures offered at the IVW in the winter term 1992/1993 for students of the University of Kaiserslautern.

Today the institute offers about 35 semester hours/

week of lectures and laboratories. In 1993 the first of meanwhile over 170 dissertations was submitted. The institute with its fields of competence has step by step become established as an important research facility in the area of polymer composites, nationally as well as internationally.

With a permanent staff of about 120 full-time equivalent employees the institute also represents a significant economic factor for the region. The international team of scientists – approx. 18 different nations work at IVW – mostly consists of engineers, chemists and physicists, complemented by guest scientists.

2015

IVW, represented by Prof. Dr.-Ing. Peter Mitschang, and the company Präzisionsmaschinenbau Bobertag GmbH, received the Innovation Award 2014, presented by Minister of Economics Eveline Lembke, for the development of a new innovative system for permeability determination.



2015

2016

For the development of a novel aneurysm clip IVW, represented by Dr. Martin Gurka, together with its partners Adete GmbH, NEOS Surgery S.L. and the University Hospital Antwerp, received the coveted JEC Award 2016 in the category "Medical".



2016

2018

Minister of Science Prof. Dr. Konrad Wolf presents Prof. Dr.-Ing. Ulf Breuer with a 10 million Euro funding notice for the Technology Center Thermoplastic Composites TTC.



2018

2020

GWK recommendation for admission to the Leibniz Association



2021



2015

Festive colloquium 25 years IVW with top-class guests from politics and economy. Prof. Dr.-Ing. Breuer here with Mayor Susanne Wimmer-Leonhardt.



2016

The Rhineland-Palatinate Innovation Award 2016 for a high temperature resistant, tough modified hybrid resin and high performance fibers was awarded to IVW and its partner CirComp GmbH, presented by Minister of Economics Eveline Lembke.



2019

The AVK Innovation Award for a tape dispenser for manual application of unidirectionally oriented fiber tapes, was awarded to IVW, represented by Dr. Nicole Motsch-Eichmann and partner M&A Dieterle GmbH Maschinen- und Apparatebau.

Spin-Offs

Spin-offs are a cornerstone of successful technology success.

IVW supports scientists willing to found a company in the realization of their ideas and innovations.

Since the foundation of the institute, more than 200 new jobs have been created in 13 spin-offs in the high technology sector – including the following:

A+ Composites

A+ Composites was spun off from IVW in 2015. The company manufactures customized thermoplastic UD tapes and supports its customers from the sectors logistics, automotive and orthopedics in integrating the tapes into components.

ASH

Automation Steeg und Hoffmeyer GmbH has been offering individual customer solutions for more than 45 years around automation topics and special machine construction. Since 2010, the new business areas: fibre-reinforced composites, industrial control systems/programming and quality assurance systems have been continuously expanded.

CirComp

CirComp is specialized in the development and manufacturing of components from high-performance composite materials. CirComp manufactures customized components from composite materials by using the CNC controlled filament winding or resin transfer moulding (RTM) process.

CompActive

CompActive develops surface-integrated bending actuators on the basis of shape memory alloys. The technology offers a solution for completely new adjustment functions in the smallest installation space with minimal additional mass – completely without mechanics, motor and gear.

EASICOMP

Easicomp GmbH was founded in 2011 and is a leading service provider in the field of LFT (long-fiber reinforced thermoplastics). Easicomp's services include, amongst others, counseling, production, development and distribution of thermoplastic composites.

EVOLIME

Evolime GmbH is specialized in the development and manufacturing of FRP wheel-like structures. It utilizes the CompoSpoke-technology which has been invented at the institute. With its products the company targets industrial markets as well as mobility applications.

INTELLIGHT

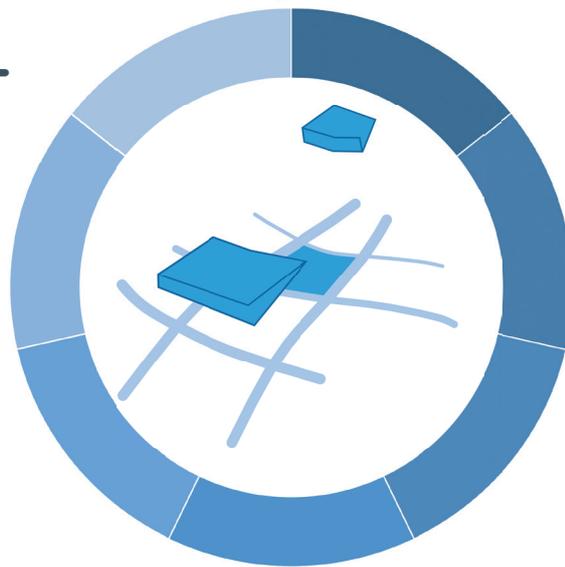
INTELLIGHT-Intelligent Lightweight Solutions stands for unique competence and more than 20 years of experience in expertise, engineering and implementation of intelligent plastic, composite and hybrid lightweight solutions. Today, we are THE independent engineering specialist in plastics and multi-material lightweight design.

A+composites
■ leicht ■ stabil ■ effizient


INTELLIGHT
intelligent lightweight solutions


ASHI
AUTOMATION
STEEG & HOFFMEYER


EVOLIME
RADIAL COMPOSITES



CirComp
Competence in Composites

EASICOMP
engineered advanced solutions in composites


CompActive

Statements from A to Z



AIRBUS



"30 years of innovative composite solutions for Airbus from IVW, congratulations!"

Bernd Räckers – Airbus

ALBANY
Engineered Composites



"Since the foundation of IVW 30 years ago, there has been a close relationship, starting with my doctorate in the field of processing technology and support for my company spin-off to a large number of successful funded and bilateral projects. I congratulate IVW on 30 years of impressive institute history and look forward to further cooperation in innovative subject areas."

Dr. Ralph Funck – Albany Engineered Composites



"Congratulations to all staff of IVW as you mark 30 years of sustained, high quality contributions to composite materials research and industrial application, both in Germany and globally. The staff of CACM are proud to have collaborated with you over most of this period, and look forward to many more years of fruitful interactions."

Prof. Simon Bickerton –

Centre for Advanced Composite Materials, University of Auckland

AVK
INDUSTRIEVEREINIGUNG
VERSTÄRKT KUNSTSTOFFE
FEDERATION OF REINFORCED PLASTICS



"Since its foundation 30 years ago, IVW has been a very active member of our network, it supports several of our working groups with employees from different departments and leads an AVK industrial project. The expertise of IVW employees is widely recognized in the composites industry and IVW enjoys a high reputation."

Dr. Elmar Witten – AVK - Industrievereinigung Verstärkte Kunststoffe e.V.



“Congratulations from Munich on the anniversary! 30 years in a challenging environment is a remarkable achievement. IVW has played its part in the groundbreaking series projects of the BMW i3, the BMW i8 and the BMW 7 Series. With a fundamental understanding of materials and technology for CFRP, we have been able to develop quantities that were unthinkable some time ago. Best wishes for the future - for the institute, but above all for the employees and students!”

Dr. Andreas Reinhardt – BMW Group



“Since Bond-Laminates was founded, there has been a close cooperation with the Institute for Composite Materials. A large number of funded and bilateral research projects have been carried out very successfully during this time. The BMBF-supported SpriForm project was certainly a highlight, since it is an important milestone in the manufacture of highly resilient thermoplastic fiber composite components. The support of IVW has always been characterized by highly professional competence and reliability.”

Prof. Dr. Christian Obermann – Bond Laminates



“The use of new materials in product development requires a great deal of advance development work. IVW has always proved to be a very reliable and competent partner for us in the past years. Both in the field of method development for virtual design as well as in the field of material characterization and testing technology, we are very happy to draw on this expertise. We wish you continued success for the next 30 years and look forward to further cooperation.”

Dr. Christiane Hack –

Brose Fahrzeugteile SE & Co. KG



BOND
LAMINATES
A company of the LANXESS group

brose
Excellence in Mechatronics

Statements from A to Z



"I had the opportunity to work with IVW in the framework of an H2020 project I was coordinating and I can state that it was a really positive experience. IVW's mind-set oriented to applied research and results-driven methodologies, as well as their profound knowledge on materials, provided good assets to the project. We congratulate IVW for 30 years of successful research and hope we can cooperate in a near future!"

Dr. Carla Silva – CITEVE



"The CU West working groups established at IVW, Thermoplastic Composites, Biocomposites as well as Smart Structures, are among the most prominent groups in our network. The high level of acceptance and the very broad-based expertise of the institute is also reflected in the supraregional demand from our regional departments CU East and CU Switzerland. IVW is an important hub for Composites United and is one of the bases for the further industrialization of fiber composite technology in Germany and Europe."

Alexander Gundling – Composites United e.V.



"Researchers at the Center for Composite Materials (CCM) of the University of Delaware (UD) and IVW have enjoyed fruitful interaction and collaboration for many years, initiated with Professor Klaus Friedrich's visit to UD in the early 1980s."

Prof. Tsu-Wei Chou – University of Delaware



"For three decades, IVW has been a leading research partner in production technologies for composite materials."

Prof. Clemens Dransfeld –
TU Delft / Faculty of Aerospace Engineering



"When it was founded 30 years ago, IVW was future-oriented with its mission and interdisciplinary orientation. From the very beginning, it has focused on excellence, has flexibly integrated new developments into its portfolio and is today rightly one of the first points of contact and a highly competent partner when it comes to sustainable, holistic innovations and solutions in the field of composite materials. Happy birthday and all the best for the future!"

Prof. Dr. Michael Kupke – Deutsches Zentrum für Luft- und Raumfahrt (DLR)



"I am pleased about the impressive development and continuing success of IVW. With a wise selection of interesting and relevant issues that the institute is working on and its outstanding achievements in research and teaching, it has earned itself a leading position in global competition - for which I would like to express my thanks and recognition."

Senator Wilfried Ensinger – Ensinger GmbH



"We would like to thank IVW for the many years of excellent cooperation, both in bilateral and publicly funded projects."

Dr.-Ing. Christoph L. Klingshirn – Freudenberg FST GmbH



"We at John Deere consider IVW in Kaiserslautern a very competent partner for development projects in the field of lightweight construction, especially when composite materials are used."

Steffen Fischer – John Deere GmbH & Co. KG



Statements from A to Z



"Since its foundation in 1990, the Institute for Composite Materials has been closely linked with the Technische Universität Kaiserslautern and is an important, reliable and powerful research partner of the TUK. As a long-standing member of the Supervisory Board, I have been able to accompany the very good development of IVW. I congratulate IVW on its 30th anniversary and wish the institute further growth and success."

Prof. Dr. Helmut J. Schmidt –

Technische Universität Kaiserslautern



"The joint supervision of doctoral theses has provided a number of interesting insights into the working methods and techniques at IVW. I hope to further intensify this cooperation in the coming years."

Prof. Dr. Werner Thiel – Technische Universität Kaiserslautern



"Congratulations on 30th anniversary! We will continue to be with IVW who offers not only good technical insight and advice but also good opportunity to demonstrate it."

Dr. Akio "Adam" Taniguchi – Kaneka Belgium NV



"IVW – a competent partner for all questions concerning innovative materials and processing methods."

Dr. Rolf Reinicke – KS Gleitlager GmbH



"At IVW we find the necessary expertise, which significantly supports us in the progress of our development projects. The commitment in the implementation of the projects is uniquely good. You come as a business partner and, just like a friend, you are thoroughly advised; that is why we always return to IVW with new projects."

Dr. Marcel Sommer – Lonza Group AG



"Congratulations from Munich on the anniversary! 30 years in a challenging environment is a remarkable achievement. IVW has played its part in the groundbreaking series projects of the BMW i3, the BMW i8 and the BMW 7 Series. With a fundamental understanding of materials and technology for CFRP, we have been able to develop quantities that were unthinkable some time ago. Best wishes for the future - for the institute, but above all for the employees and students!"

Angelika Fröhlich – MT Aerospace AG



"We have always perceived IVW as an extremely competent CFRP know-how carrier and have been able to advance several joint projects in an incredible dynamic. The high level of professional competence, combined with the broad basic knowledge across all issues in the composites world, is a major reason to call IVW the first choice for complex issues. On the occasion of the IVW's anniversary, we would like to congratulate you, we are looking forward to a further successful cooperation and all the best for the next 30 years!"

Dr. Klaus Edelmann – PREMIUM-AEROTEC



"Earned my first spurs at IVW 25 years ago and have enjoyed working together ever since!"

Stefan Reichel – RELINEEUROPE AG



"For several years we have appreciated the competence as well as the very constructive and open nature of the cooperation with our colleagues at IVW, which has always been very fruitful in the design and manufacture of composite components, the tribological optimization of polymer coatings and general material analysis, among other things."

Carsten Sohl – SchäferRolls GmbH & Co. KG



Statements fom A to Z



"As one of the first institutes in the field of composite materials, IVW has been continuously opening up new fields of application for composite materials and broadening the knowledge about the material and its processing technology for three decades. If you are looking for a tailor-made composite material solution worldwide, the way will lead you to IVW."

Dr. Andreas Wöginger – SGL Carbon SE



"In the field of fiber-reinforced composites, we have appreciated IVW's great technical expertise and the wide range of equipment available for years. Meanwhile, the cooperation ranges from application-oriented material characterization and durability analyses to the supervision of dissertations and joint R&D projects."

Dr. Dieter Heintl – Siemens AG



"As one of the early members of IVW in 1990, I am looking forward to joining the colleagues of IVW to celebrate the 30 years anniversary of the institute and its great achievements in advancing the sciences and technology of composite materials in the past three decades."

Prof. Lin Ye – University of Sydney



TEIJIN CARBON EUROPE GMBH



"IVW stands for fresh ideas in materials, construction methods and production processes. IVW and Teijin have been good partners for many years: Together we share a passion for composite materials as the key to our future in the important topics of mobility, energy and sustainability."

Dr. Bernd Wohlmann – Teijin Carbon Europe GmbH



"IVW has been a role model and indispensable partner for innovations in the field of composite materials for 30 years."

Marco Goettinger – Voith Composites SE & Co. KG



VOITH



"We consider ourselves very lucky to have such successful scientific institute as IVW at the business location Kaiserslautern. The institute fits very well into our orientation as a modern technology location and our definition as a high-tech region of international format. We are especially pleased about the numerous spin-offs of IVW, which further promote Kaiserslautern as a business and science location, guarantee technology transfer and create sustainable jobs. Furthermore, IVW enjoys the highest national and international reputation."

Dr. Philip Pongratz

WFK – Wirtschaftsförderungsgesellschaft
Stadt und Landkreis Kaiserslautern mbH



WFK
WIRTSCHAFTSFÖRDERUNG
KAISERSLAUTERN



"We look back on several years of positive cooperation and appreciate the competence of the Institute for Composite Materials, which provided added value for us in several projects in the fields of tribology, plastics and general material analysis."

Dipl.-Ing. Bernd Küster –

Wilo SE – Materials

wilo



"IVW is a reliable partner, innovative and effective in research!"

Dr. Thomas Schalk – ZF Friedrichshafen AG



30 Years - IVW Anniversary Colloquium

16 | 17 September

Day 1, Wednesday, September 16

10:00 h **Registration Building 57**

11:00 h **Opening
Ulf Breuer**

Managing Director IVW
"Institute for Composite Materials –
research to innovate"

11:20 h **Konrad Wolf**

Minister of Science of the State of Rhineland-Palatinate
Greetings

11:25 h **Arnd Poetzsch-Heffter**

President Technische Universität Kaiserslautern
Greetings

11:30 h **Klaus Weichel**

Lord Mayor of Kaiserslautern
Greetings

11:35 h **Steffen Mehlich**

Alexander von Humboldt Foundation
Greetings

11:40 h **Kathrin Sick**

Deutsche Forschungsgemeinschaft
Greetings

12:00 h **Keynote**

Guiscard Glück

BASF SE
"Composing solutions – creating chemistry"

12:30 h **Lunch Break**

Module I: Material

Chair: Bernd Wetzel, IVW

13:30 h **Alkiviadis Paipetis**

Invited speaker
University of Ioannina
"Multi-functional aerospace composite structure:
inherent energy harvesting for autonomous SHM"

14:00 h **Martin Gurka**

IVW
"Advanced monitoring techniques
for mechanical testing of CFRP"

14:30 h **Bernd Sauer**

Invited speaker
Technische Universität Kaiserslautern
Institute of Machine Elements, Gears,
and Transmission
"Plastic gears –
special features for tribology"

15:00 h **Andreas Gebhardt**

IVW
"Photo-curable resin injection and
its application in design"

15:30 h

Bus transfer from IVW to hotels

18:30 h Bus transfer from hotels to evening reception

19:00 h **Evening Reception**

22:30 h Bus transfer to hotels

postponed to autumn 2021 due to the corona pandemic

2020

10

September

postponed to autumn 2021 due to the corona pandemic

Day 2, Thursday, September 10

08:00 h

Keynote

Bernd Räckers

Invited speaker

Airbus

“Composit

a success...nties for

re...nt

Module II

Thomas Schalk

Invited speaker

ZF Friedrichshafen AG

“Impact on material technology

from new mobility concepts”

09:00 h

Jan Rehra

IVW

“Carbon and steel fiber reinforced composites – description of the mechanical material behavior”

09:30 h

Florian Schimmer

IVW

“The effect of curvature on the low velocity impact resistance of CF/PEEK laminates”

10:00 h

Coffee Break

10:30 h

Salvator Llas Vagas

Invited speaker

Neos Surgery

“Use of composite materials in medical devices – case study”

11:00 h

Yves Becker

IVW

“Changes and challenges of a composite medical implant application”

Module III:

Manufacturing Science

Chair: Peter Mitschang, IVW

11:30 h

Angelos Miaris

Invited speaker

Premium AEROTEC

“Composites in the aerospace industry – the challenge of the next 30 years”

12:00 h

Julian Weber

IVW

“Process hybridization to manufacture complex thermoplastic parts by means of thermoforming”

12:30 h

Lunch Break

13:30 h

Andreas Reinhardt

Nevine Tagscherer

Invited speakers

BMW AG

“Free-form additive manufacturing for next generation composite structures”

14:00 h

David May

IVW

“Topology-optimized structural components through wet fiber placement”

Honory Session: 75th Birthday of Klaus Friedrich

Chair: Ulf Breuer, IVW

14:30 h

Karl Schulte

Invited speaker

Hamburg University of Technology

Institute of Polymer and Composites

“Controlling mechanical and electrical properties of polymer composites with carbon-based fillers for improved industrial products”

15:00 h

Lin Ye

Invited speaker

University of Sydney

Centre for Advanced Material Technology

“Fusion quality of 3D printed polymers and polymer composites”

15:30 h

Andreas Klingler

IVW

“From nano modifications to macro properties”

16:00 h

Conclusions

Ulf Breuer

Managing Director IVW

16:15 h

End of Colloquium

Company Profile



The Institute for Composite Materials (IVW) is a non-profit research institution of the state of Rhineland-Palatinate and the Technical University of Kaiserslautern.

It researches the basics for future applications of composite materials, which are of great importance for the mobility of the future, the fields of energy, climate and environment, production technology as well as for health care. New materials, construction methods and manufacturing processes are investigated and - after the basic understanding has been developed - tailor-made for the respective product requirements.

The focus is on the entire process chain, from the basic materials to characterization and simulation, from construction methods and production technology to component testing and recycling. New ideas and innovative concepts are not only an essential part of the research and further development of the institute, but also lead to spin-offs.

Newly acquired knowledge is transferred, above all into science, but also into teaching, the interested public and application.

Employees*	115
Budget*	M € 12
Projects (total)*	198
Funded Third Party Projects	53
Publications*	127
Lectures & Labs	35
Theses (Master, Bachelor, Diploma)	62
Doctoral Degrees (since 1990)	over 170
Laboratory and Office Space	m ² 7200
Equipment	M € 25

*2019, without "TTC"